S/M No. : OR4A0B0W001

# Service Manual

## Microwave Oven

**Model: KOR-4A0B0W**

✔ **Caution**

: In this Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service Information Center (http://svc.dwe.co.kr).

DAEWOO ELECTRONICS

Jan. 2011

# *PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY*

(a) Do not operate or allow the oven to be operated with the door open.

(b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary: (1) Interlock operation, (2) Proper door closing, (3) Seal and sealing surfaces (arcing, wear, and other damage), (4) Damage to or loosening of hinges and latches, (5) Evidence of dropping or abuse.

(c) Before turning on power to the microwave oven for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.

(d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.

(e) A microwave leakage check to verify compliance with the federal performance standard should be performed on each oven prior to release to the owner.

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# *SAFETY AND PRECAUTIONS*

**CAUTION**

This device is to be Serviced only by Properly Qualified Service Personel. Consult the Service Manual for Proper Service Procedures to Assure Continued Safety Operation and for Precautions to be Taken to Avoid Possible Exposure to Excessive Microwave Energy.

## 1. FOR SAFE OPERATION

Damage that allows the microwave energy (that cooks or heats the food) to escape will result in poor cooking and may cause serious bodily injury to the operator.
IF ANY OF THE FOLLOWING CONDITIONS EXIST, OPERATOR MUST NOT USE THE APPLIANCE.
(Only a trained service personnel should make repairs.)

(1) A broken door hinge.
(2) A broken door viewing screen.
(3) A broken front panel, oven cavity.
(4) A loosened door lock.
(5) A broken door lock.

The door gasket plate and oven cavity surface should be kept clean.
No grease, soil or spatter should be allowed to build up on these surfaces or inside the oven.
DO NOT ATTEMPT TO OPERATE THIS APPLIANCE WITH THE DOOR OPEN.
The microwave oven has concealed switches to make sure the power is turned off when the door is opened.
Do not attempt to defeat them.
DO NOT ATTEMPT TO SERVICE THIS APPLIANCE UNTIL YOU HAVE READ THIS SERVICE MANUAL.

## 2. FOR SAFE SERVICE PROCEDURES

1. If the oven is operative prior to servicing, a microwave emission check should be performed prior to servicing the oven.
2. If any certified oven unit is found to servicing, a microwave emission check should be performed prior to servicing the oven.
   (a) inform the manufacturer, importer or assembler,
   (b) repair the unit at no cost to the owner,
   (c) attempt to ascertain the cause of the excessive leakage,
   (d) tell the owner of the unit not to use the unit until the oven has been brought into compliance.
3. If the oven operates with the door open, the service person should tell the user not to operate the oven and contact the manufacturer and CDRH immediately.

**CAUTION**

MICROWAVE RADIATION

PERSONNEL SHOULD NOT BE EXPOSED TO THE MICROWAVE ENERGY WHICH MAY RADIATE FROM THE MAGNETRON OR OTHER MICROWAVE GENERATING DEVICE IF IT IS IMPROPERLY USED OR CONNECTED. ALL INPUT AND OUTPUT MICROWAVE CONNECTIONS. WAVEGUIDE FLANGES AND PASKETS MUST BE SECURE. NEVER OPERATE THE DEVICE WITHOUT A MICROWAVE ENERGY ABSORBING LOAD ATTACHED. NEVER LOOK INTO AN OPEN SAVEGUIDE OR ANTENNA WHILE THE DEVICE IS ENERGIZED.

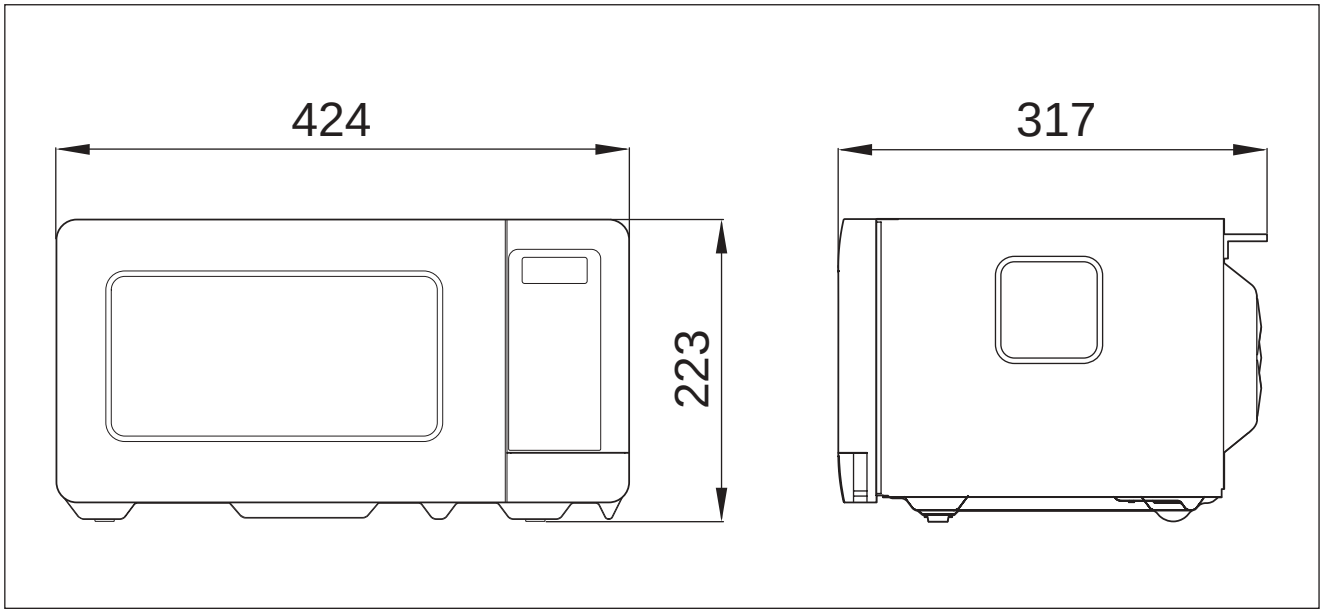
# SPECIFICATIONS

| | | |
|---|---|---|
| POWER SUPPLY | | 230V AC, 50Hz SINGLE PHASE WITH GROUNDING |
| MICROWAVE | INPUT POWER | 900 W |
| | ENERGY OUTPUT | 500 W |
| | FREQUENCY | 2,450MHz |
| OUTSIDE DIMENSIONS (W x H x D) | | 424 x 223 x 317 mm |
| CAVITY DIMENSIONS (W x H x D) | | 275 x 178 x 297 mm |
| CAVITY VOLUME | | 15 L |
| NET WEIGHT | | APPROX. 9.0 Kg |
| TIMER | | 59 min. 90 sec. |
| POWER SELECTIONS | | 10 Levels |

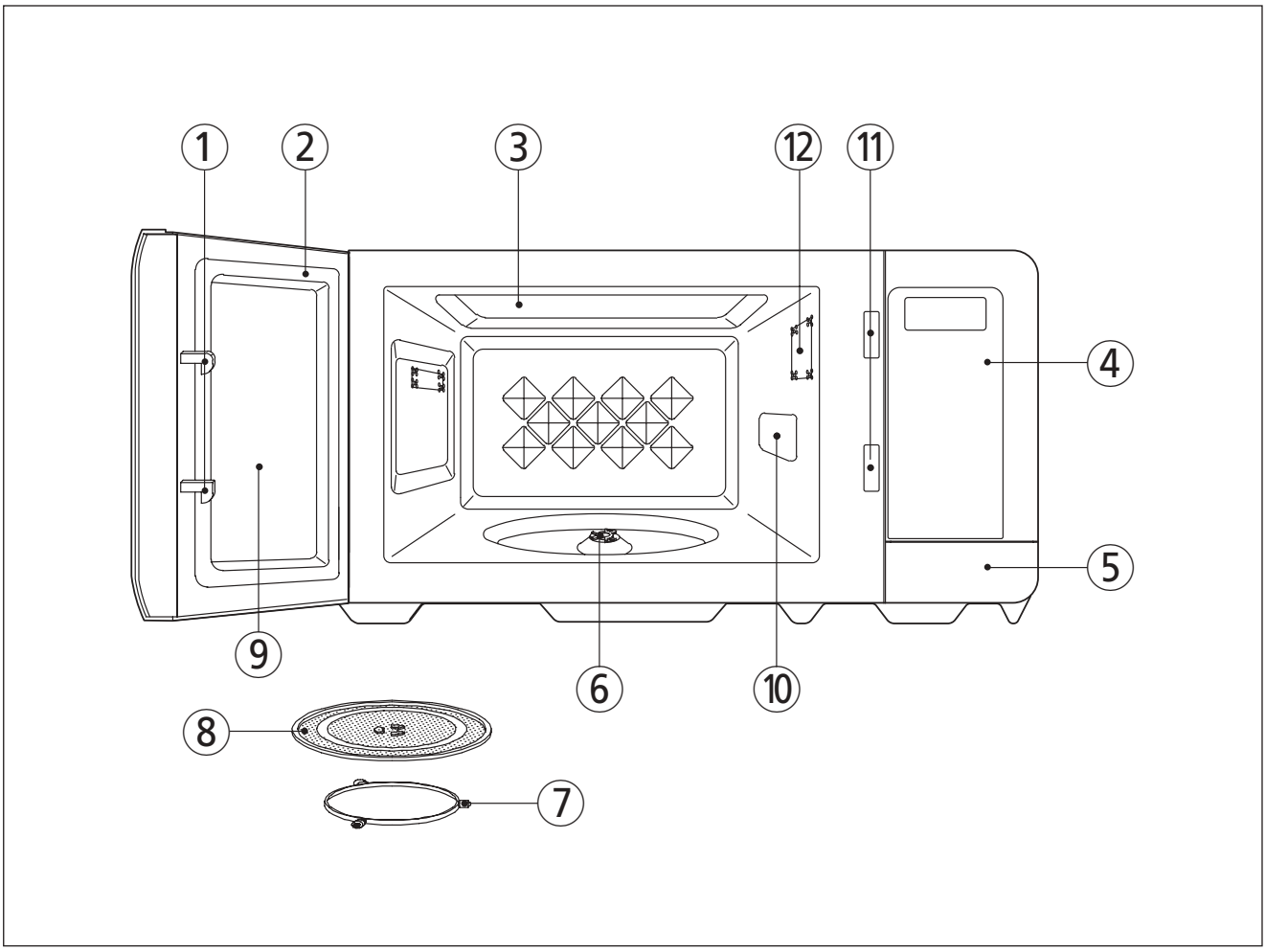
** Specifications are subject to change without notice.*

# EXTERNAL VIEW

**1. OUTER DIMENSION**



## 2. FEATURES DIAGRAM




① **Door latch -** When the door is closed, it will automatically shut off. If the door is opened while the oven is operating, the magnetron will automatically shut off.

② **Door seal -** The door seal surfaces prevent microwaves escaping from the oven cavity.

③ **Oven cavity**

④ **Control panel**

⑤ **Door open button -** To open the door push the door open button.

⑥ **Coupler -** This fits over the shaft in the center of the oven cavity floor.
This is to remain in the oven for all cooking.

⑦ **Roller guide -** This must always be used for cooking together with the glass cooking tray.

⑧ **Glass cooking tray -** Made of special heat resistant glass. The tray must always be in proper position before operating. Do not cook food directly on the tray.

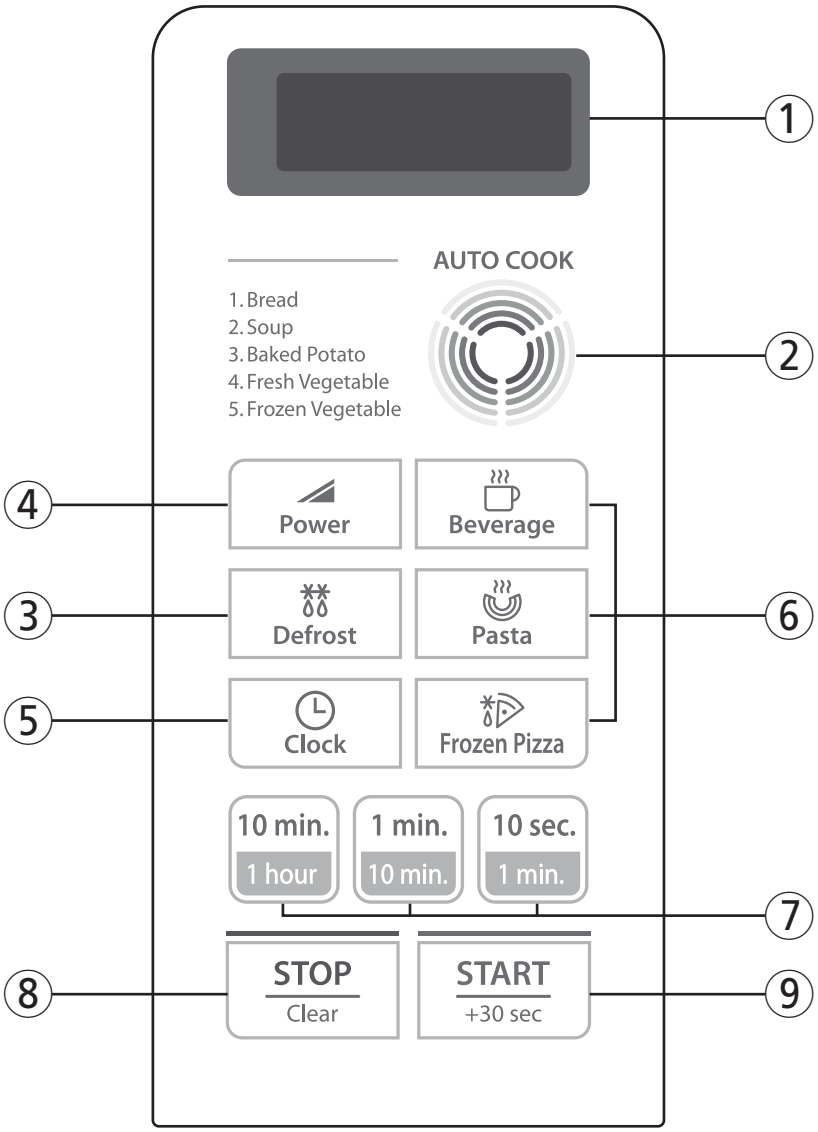
⑨ **Viewing screen -** Allows viewing of food.
The screen is designed so that light can pass through, but not the microwave.

⑩ **Waveguide cover -** Protects the microwave outlet from splashes of cooking foods.

⑪ **Safety interlock system**

⑫ **Oven lamp -** Automatically turns on during oven operating.

## 3. CONTROL PANEL




① **DISPLAY -** Cooking time, power level, indicators and the current time are displayed.

② **AUTO COOK -** Used to cook or reheat many of favorite food.

③ **DEFROST -** Used to defrost foods for time and weight.

④ **POWER -** Used to set power level.

⑤ **CLOCK -** Used to set clock.

⑥ **ONE TOUCH COOK -** Used to cook or reheat specific quantities of food.

⑦ **TIME SET PAD -** Used to set the cooking time and the current time.

⑧ **STOP/CLEAR -** Used to stop the oven operation or to delete the cooking data.

⑨ **START/+30 SEC -** Used to start the oven and also used to set a reheat time.

# INSTALLATION

**1. Steady, flat location**

This microwave oven should be set on a steady, flat surface.

This microwave oven is designed for counter top use only.

**2. Leave space behind and side**

All air vents should be kept a clearance. If all vents are covered during operation, the oven may overheat and, eventually, cause failure.

**3. Away from radio, and TV sets**

Poor television reception and radio interference may result if the oven is located close to a TV, radio, antenna, or feeder and so on. Position the oven as far from them as possible.

**4. Away from heating appliances and water taps**

Keep the oven away from hot air, steam and splash when choosing a place to position it, or the insulation might be adversely affected and breakdowns occur.

**5. Power supply**

- Check your local power source.

  This microwave oven requires a current of approximately 4.5 amperes, 230 Volts, 50 Hz.
- Power supply cord is about 0.8 meters long.
- Used the voltage must be the same as specified on this oven. Using a higher voltage may result in a fire or other accident causing oven damage. Using low voltage will cause slow cooking. We are not responsible for damage resulting from use of this oven with a voltage of ampere fuse other than those specified.
- This appliance is supplied with cable of special type, which, if damaged, must be repaired with cable of same type.

  Such a cable can be purchased from DAEWOO and must be installed by a qualified person.

**6. Examine the oven after unpacking for any damage such as:**

A misaligned door, broken door or a dent in cavity.

If any of the above are visible, DO NOT INSTALL, and notify dealer immediately.

**7. Do not operate the oven if it is colder than room temperature**

(This may occur during delivery in cold weather.) Allow the oven to become room temperature before operating.

## EARTHING INSTRUCTIONS

This appliance must be earthed. In the event of an electrical short circuit, earthing reduces the risk of the electric shock by providing an escape wire for the electric current. This appliance is equipped with a cord having a earthing plug. The plug must be plugged into an outlet that is properly installed and earthed.

### WARNING

Improper use of the earthing plug can result in a risk of electric shock. Consult a qualified electrician or service-man if the earthing instructions are not completely understood, or if doubt exists as to whether the appliance is properly earthed, and either : If it is necessary to use an extension cord, use only a 3-wire extension cord that has a 3-blade earthing plug, and a 3-slot receptacle that will accept the plug on the appliance. The marked rating of the extension cord should be equal to or greater than the electrical rating of the appliance, or DO NOT USE an extension cord.

# OPERATIONS AND FUNCTIONS

1. Connect the mains lead to an electrical outlet.
2. After placing the food in a suitable container, open the oven door and put it on the glass tray. The glass tray must always be in place during cooking.
3. Close the door securely.
4. The oven door can be opened at any time during operation by pushing the door open button on the control panel. The oven will automatically shut off. To restart the oven, close the door and then touch the START pad.
5. Each time a pad is touched. a BEEP will sound to acknowledge the touch.
6. The oven automatically cooks on full power unless set to a lower power level.
7. The display will show ": 0" when the oven is plugged in.
8. Time clock returns to the present time when the cooking time ends.
9. When the STOP/CLEAR pad is touched during the oven operation, the oven stops cooking and all information retained. To erase all information (except the present time), touch the STOP/CLEAR pad once more. If the oven door is opened during the oven operation, all information is retained.
10. If the START pad is touched and the oven does not operate, check the area between the door and door is closed securely. The oven will not start cooking under the door is completely closed or the program has been reset.

Make sure the oven is properly installed and plugged into the electrical.

**Wattage output chart**

The power level is set by touching the POWER pad. The chart shows the display, the power level and the percentage of power.

| Touch the POWER Pad | Power Level(Display) | Approximate Percentage of Power |
|---|---|---|
| Once | P-HI | 100% |
| Twice | P-90 | 90% |
| 3 times | P-80 | 80% |
| 4 times | P-70 | 70% |
| 5 times | P-60 | 60% |
| 6 times | P-50 | 50% |
| 7 times | P-40 | 40% |
| 8 times | P-30 | 30% |
| 9 times | P-20 | 20% |
| 10 times | P-10 | 10% |
| 11 times | P-00 | 00% |

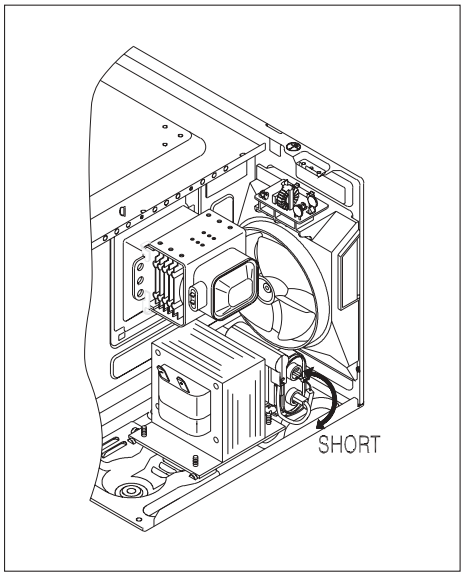
# DISASSEMBLY AND ASSEMBLY

**Cautions to be observed when troubleshooting.**

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment.
It is completely safe during normal operation.
However, carelessness in servicing the oven can result in an electric shock or possible danger from a short circuit.
You are asked to observe the following precautions carefully.

1. Always remove the power plug from the outlet before servicing.
2. Use an insulated screwdriver and ware rubber gloves when servicing the high voltage side.
3. Discharge the high voltage capacitor before touching any oven components or wiring.

   (1) Check the grounding.
   Do not operate on a two-wire extension cord.
   The microwave oven is designed to be used while earthed.
   It is imperative, therefore, to make sure it is earthed
   properly before beginning repair work.
   (2) Warning about the electric charge in the high voltage capacitor.
   For about 30 seconds after the operation stopped and electric charge remains in the high voltage capacitor.
   When replacing or checking parts, short between oven chassis and the negative high terminal of the high voltage capacitor by using a properly insulated screwdriver to discharge.



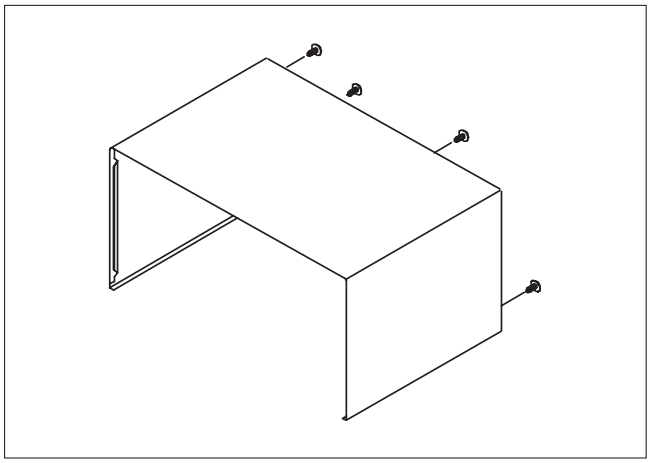

4. When the fuse is blown out due to the operation of the monitor switch; replace primary interlock switch, secondary interlock switch and interlock monitor switch.
5. After repair or replacement of parts, make sure that the screws are properly tightened, and all electrical connections are tightened.
6. Do not operate without cabinet.

**CAUTION :** Service personnel should remove their watches whenever working close to or replacing the magnetron.

**WARNING :** When servicing the appliance, need a care of touching or replacing high potential parts because of electrical shock or exposing microwave. These parts are as follows - HV Transformer, Magnetron, HV Capacitor, HV Diode, HV fuse.

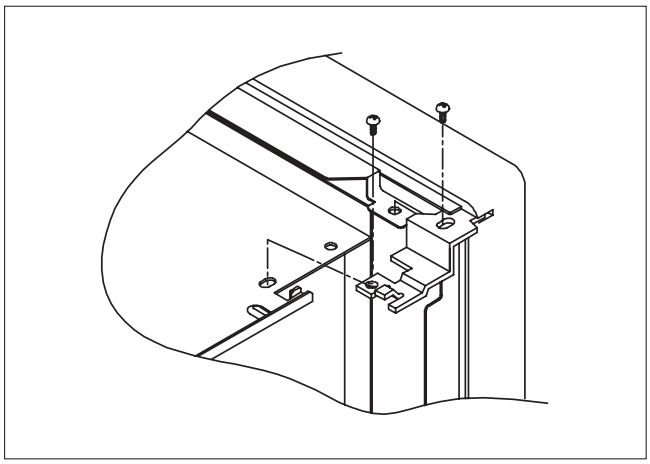
## 1. To remove cabinet

1) Remove four screws on cabinet back.
2) Pull the cabinet backward.



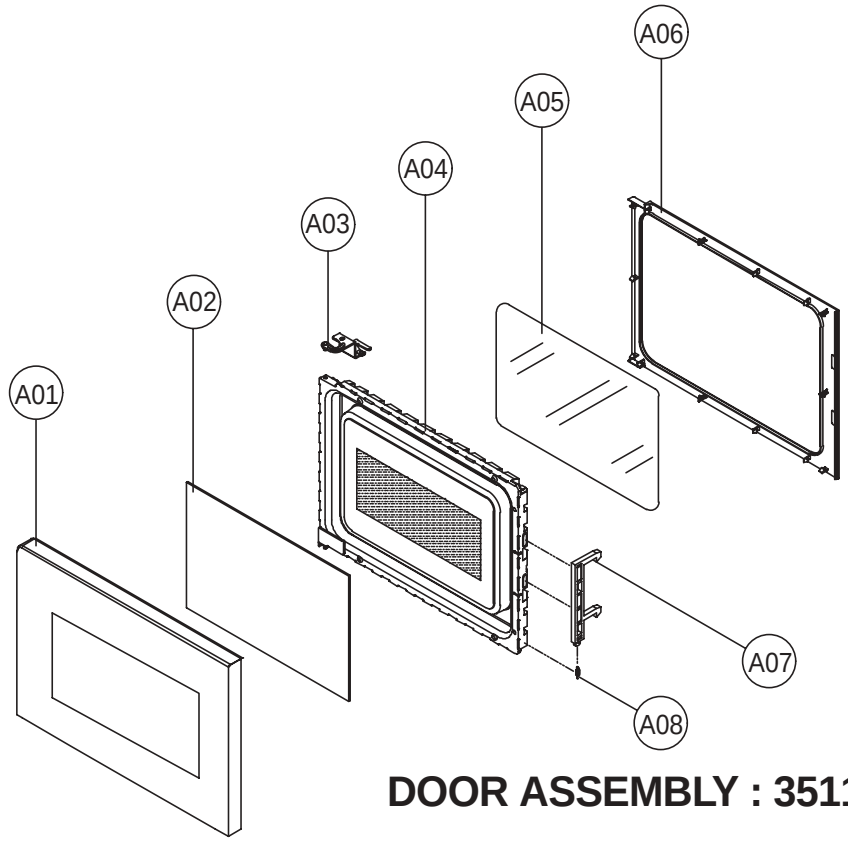
## 2. To remove door assembly

1) Remove two screws which secure the stopper hinge top.
2) Remove the door assembly from top plate of cavity.
3) Reverse the above for reassembly.



**NOTE :** After replacing the door assembly, perform a check of correct alignment with the hinge and cavity front plate.

### 3. To remove door parts.

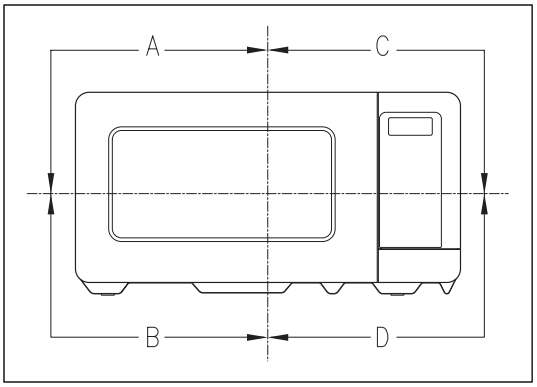



**DOOR ASSEMBLY : 3511730500**

| REF No. | PART CODE | PART NAME | DESCRIPTION | Q'TY | REMARK |
|---|---|---|---|---|---|
| A00 | 3511730500 | DOOR AS | KOR-4A070S | | |
| A01 | 3511730510 | DOOR PAINTING AS | KOR-4A070S | 1 | |
| A02 | 3517011410 | BARRIER-SCREEN *I | PE T0.1 | 1 | |
| A03 | 3513102200 | HOOK | POM | 1 | |
| A04 | 3515101300 | SPRING HOOK | PW1 | 1 | |
| A05 | 3512211420 | FRAME DOOR | HIPS SG-970 HG-1760H | 1 | |
| A06 | 3517011400 | BARRIER-SCREEN *O | TEMP GLASS T3.2 | 1 | |
| A07 | 3512303100 | GASKET | PP | 1 | |
| A08 | 3515205620 | STOPPER HINGE *T AS | KOR-4A070S | 1 | |

1) Remove the gasket door from the door painting as.
2) Remove the barrier screen inner from the door painting as.
3) Remove the frame door from the door painting as.
4) Remove the stopper hinge top as from the door painting as.
5) Remove the spring hook and the hook from the door painting as.
6) Remove the barrier screen outer from the frame door.
7) Reverse the above steps for reassembly.

## 4. Method to reduce the gap between the door seal and the oven front surface.




(1) To reduce gap located on part 'A'
- Loosen two screws on the stopper hinge top, and then push the door to contact the door seal to the oven front surface.
- Tighten two screws.

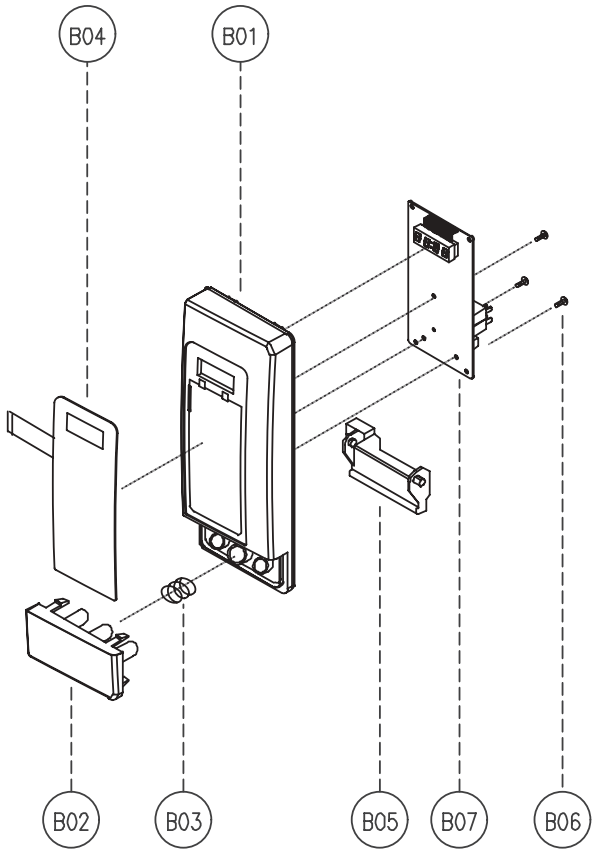
(2) To reduce gap located on part 'B'
- Loosen two screws on the stopper hinge under, and then push the door to contact the door seal to the oven front surface.
- Tighten two screws.

(3) To reduce gap located on part 'C'
- Loosen the screw on the interlock switch assembly located the top of the oven body.
- Draw the interlock switch assembly inward as possible to engage with the hook on the door bottom.
- Tighten a screw.

(4) To reduce gap located on part 'D'
- Loosen the screw on the interlock switch assembly located the bottom of the oven body.

**NOTE :** A small gap may be acceptable if the microwave leakage does not exceed 4mW/cm$^2$.

**5. To remove control panel parts.**

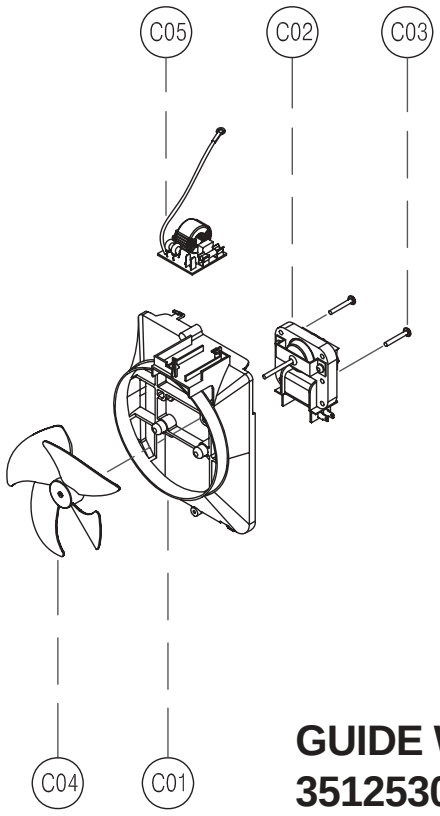



**C/PANEL ASSEMBLY :**
**PKCPSWFLV0**

| REF No. | PART CODE | PART NAME | DESCRIPTION | Q'TY | REMARK |
|---|---|---|---|---|---|
| B00 | 3516741380 | CONTROL-PANEL AS | KOR-4A0B0W | | |
| B01 | 3516741360 | CONTROL-PANEL | HIPS | 1 | |
| B02 | 3516917810 | BUTTON DOOR OPEN | HIPS SG-970 HG-1760H | 1 | |
| B03 | 441G430171 | SPRING BUTTON | SWP DIA. 0.7 | 1 | |
| B04 | 3518573800 | SWITCH MEMBRANE | KOR-4A0B0W | 1 | |
| B05 | 3513703810 | LEVER DOOR OPEN | PP 5113MF6 | 1 | |
| B06 | 7122401211 | SCREW TAPPING | T2S TRS 4*12 MFZN | 3 | |
| B07 | PKMPMSFLP0 | PCB MAIN MANUAL AS | KOR-4A0B0W | 1 | |

1) Remove the screw which secure the control panel sub as, push up two snap fits and draw forward the control panel assembly.
2) Remove three screws which secure the PCB assembly to the control panel sub as.
3) Disconnect membrane tail from the connector of the PCB assembly.
4) Remove the PCB from the control panel sub as.
5) Remove the membrane, holder LED, lever door open, spring button and button door open from the control panel sub as.
6) Reverse the above steps for reassembly.

## 6. To remove guide wind parts.



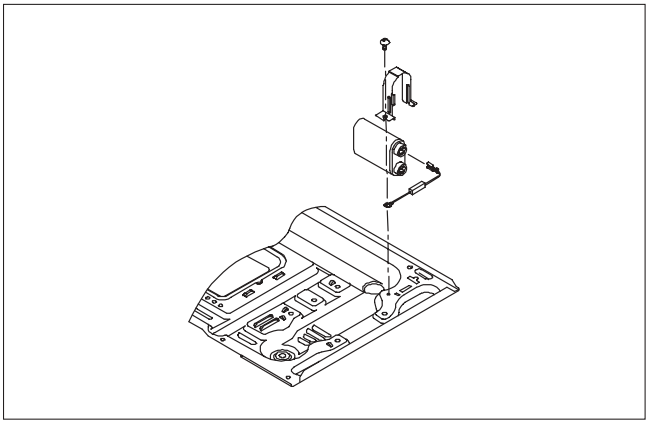

**GUIDE WIND ASSEMBLY : 3512530430**

| REF No. | PART CODE | PART NAME | DESCRIPTION | Q'TY | REMARK |
|---|---|---|---|---|---|
| C00 | 3512530430 | GUIDE WIND AS | KOR-4A070S | | |
| C01 | 3512530410 | GUIDE WIND | PP | 1 | |
| C02 | 3963513100 | MOTOR SHADED POLE | 230V 17W OEM-10DWC2-A07 | 1 | |
| C03 | 7121402511 | SCREW TAPPING | T2S PAN 4X25 MFZN | 2 | |
| C04 | 3511800300 | FAN | PP+30%GLASS | 1 | |
| C05 | 3518608300 | NOISE-FILTER | DWLF-M12 B | 1 | |

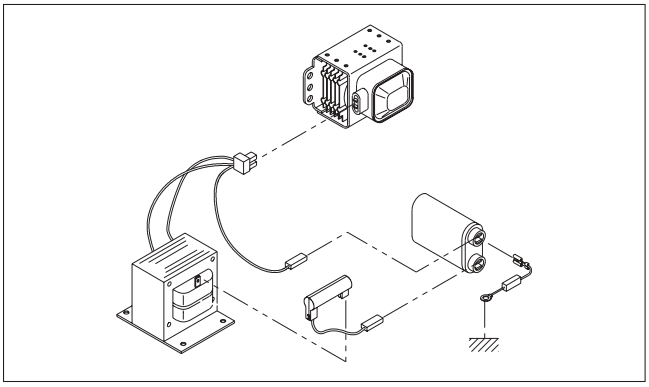
1) Remove two screws for earthing and for fixing to rear-plate.
2) Remove the noise filter from the guide wind.
3) Pull the fan from the motor shaft.
4) Remove two screws which secure the motor shaded pole.
5) Remove the motor shaded pole.
6) Reverse the above steps for reassembly.

### 7. To remove high voltage capacitor.

1) Remove the screw which secure the grounding ring terminal of the H.V. diode and the capacitor holder.
2) Remove the H.V. diode from the capacitor holder.
3) Reverse the above steps for reassembly.

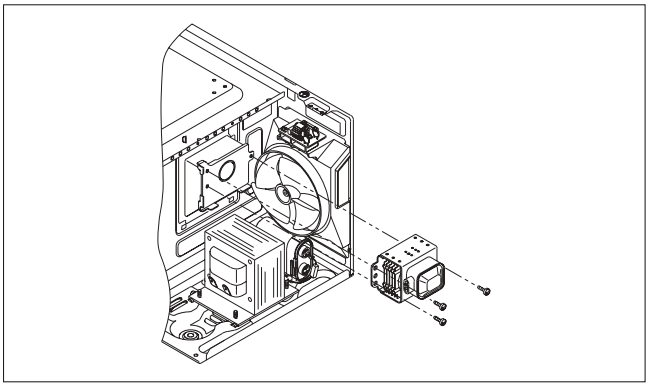


### ◆ High voltage circuit wiring

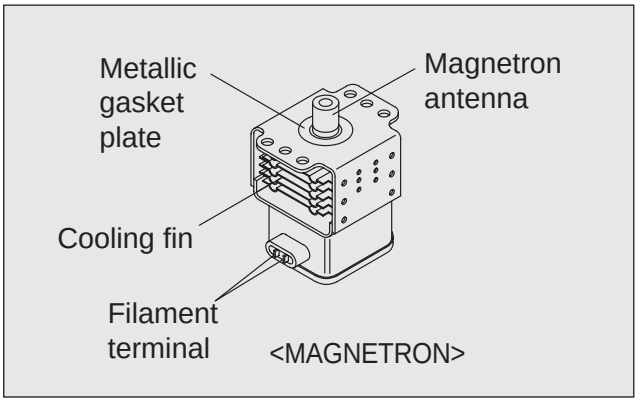


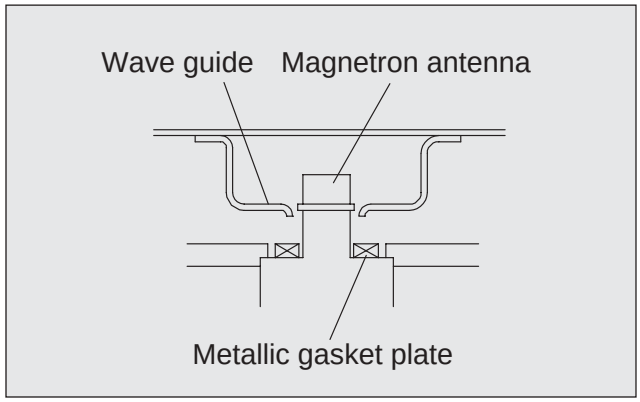
### 8. To remove magnetron.

1) Remove three screws which secure the magnetron.
2) Remove the magnetron.
3) Reverse the above steps for reassembly.



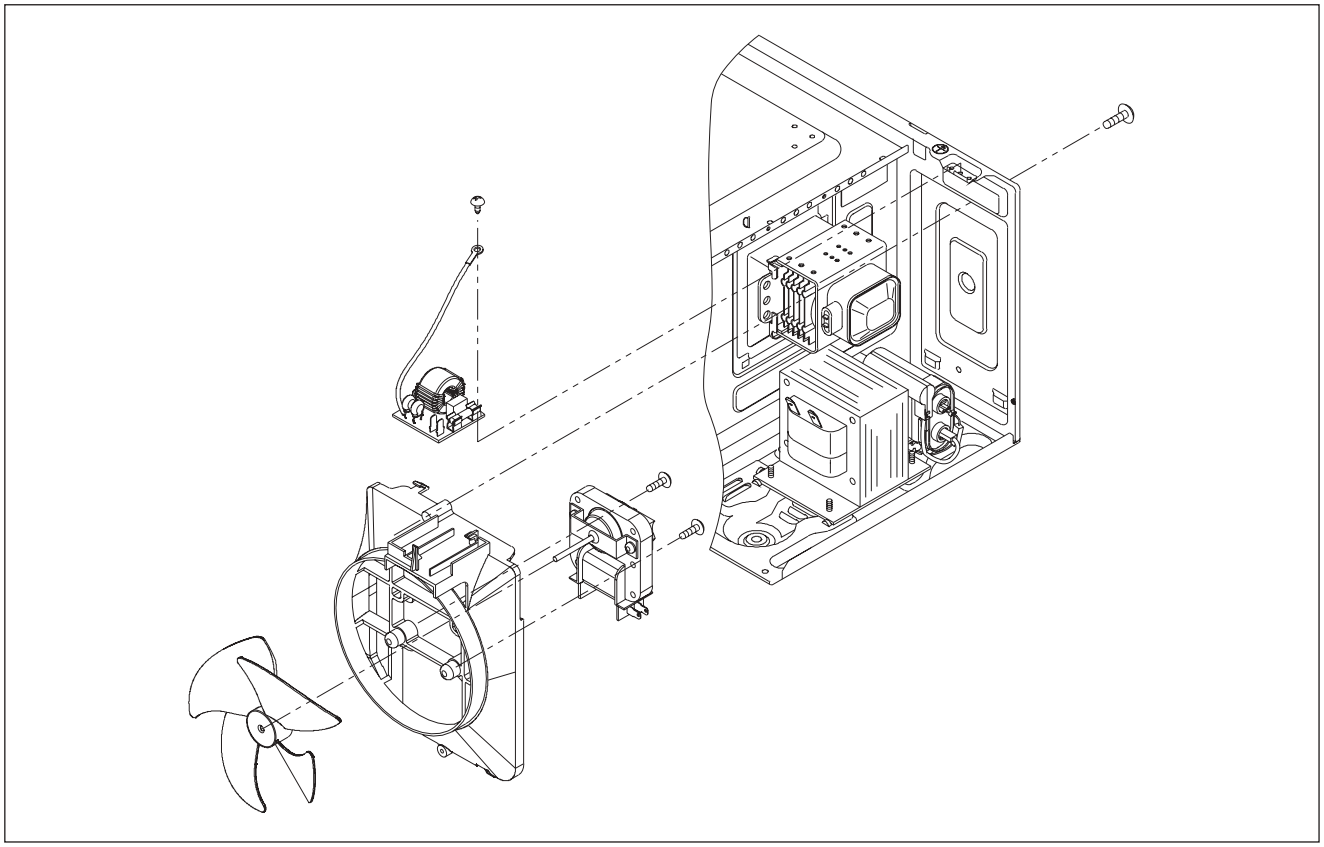
**NOTE :** Never install the magnetron without the metallic gasket plate which is packed with each magnetron to prevent microwave leakage. Whenever repair work is carried out on magnetron, check the microwave leakage. It shall not exceed 4mW/cm$^2$ for a fully assembled oven with door normally closed.



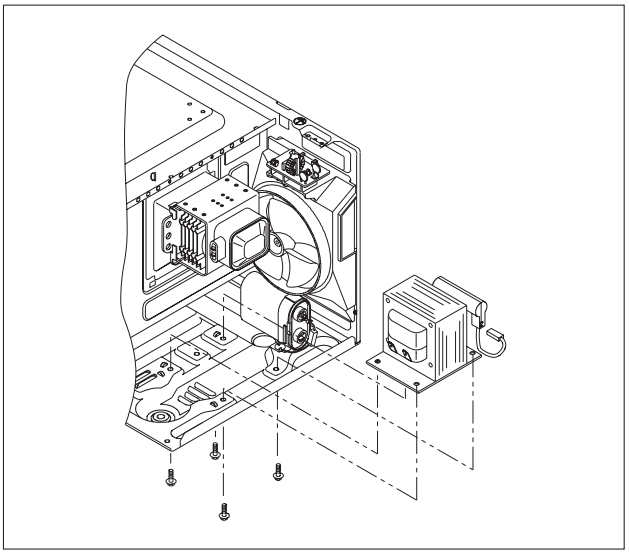
## 9. To remove wind guide assembly.

1) Remove the screw for earthing.
2) Remove the noise filter from the wind guide.
3) Remove the screw which secure the wind guide assembly.
4) Draw forward the wind guide assembly.
5) Pull the fan from the motor shaft.
6) Remove two screws which secure the motor shaded pole.
7) Remove the motor shaded pole.
8) Reverse the above steps for reassembly.



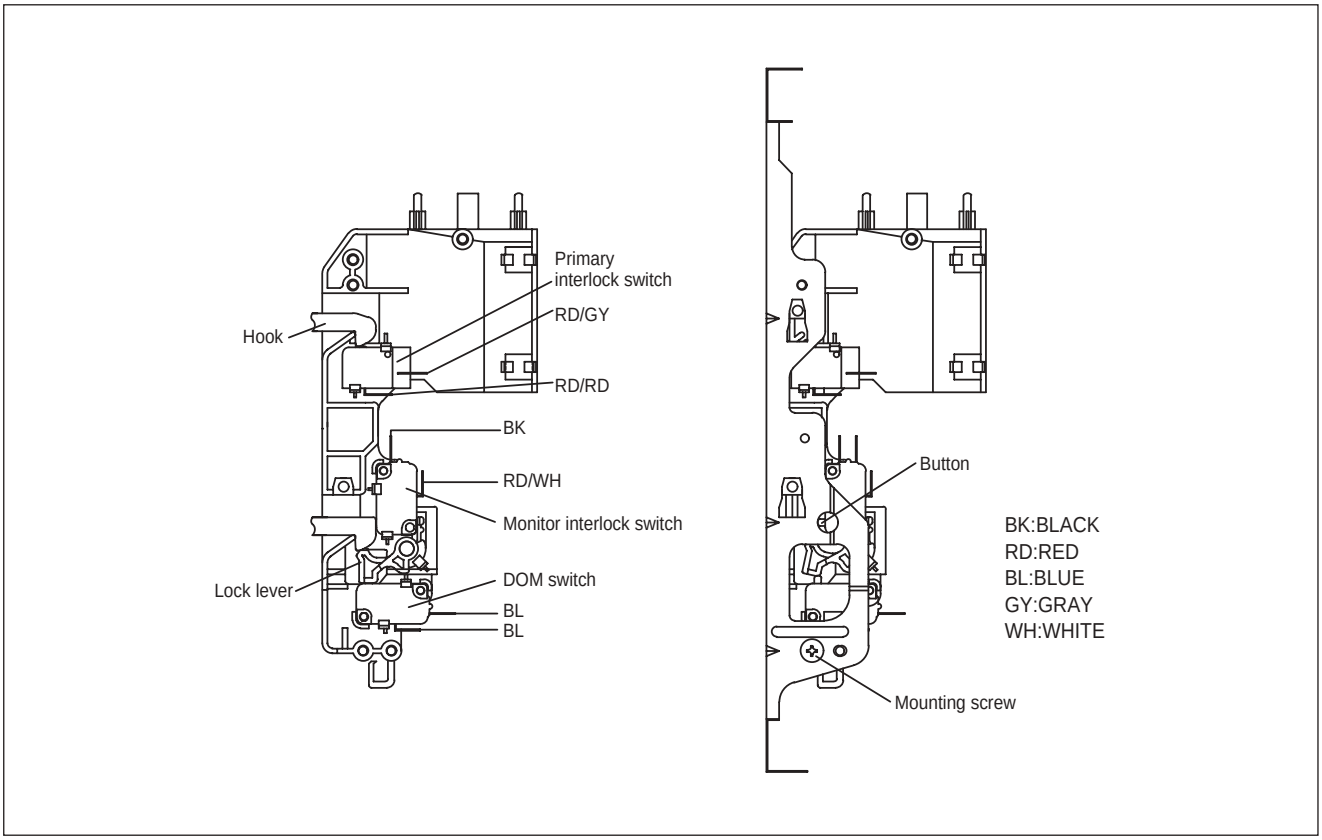
## 10. To remove H.V.transformer.

1) Remove four screws holding the H.V.transformer.
2) Remove the H.V.transformer.
3) Reverse the above steps for reassembly.



# INTERLOCK MECHANISM AND ADJUSTMENT

The door lock mechanism is a device which has been specially designed to completely eliminate microwave radiation when the door is opened during operation, and thus to perfectly prevent the danger resulting from the leakage of microwave.




**(1) Primary interlock switch**

When the door is closed, the hook locks the oven door. If the door is not closed properly, the oven will not operate.
When the door is closed, the hook pushes the button of the microswitch. Then the button of the primary interlock switch bring it under ON condition.

**(2) Secondary interlock switch and interlock monitor switch**

When the door is closed, the hook pushes the lock lever downward. The lock lever presses the button of the interlock monitor switch to bring it under NO condition and presses the button of the secondary interlock switch to bring it under ON condition.

**ADJUSTMENT :**

Interlock monitor switch

When the door is closed, the interlock monitor switch should be "OFF" condition before other switches are "ON" condition.
When the door is opened, the interlock monitor switch should be "ON" condition after other switches are "OFF" condition.

**(3) Adjustment steps**

a) Loosen the mounting screw.
b) Adjust interlock switch assembly position.
Actuation distance of primary and secondary interlock switch shall be adjusted almost 0.7mm.
c) Make sure that lock lever moves smoothly after adjustment is completed.
d) Tighten completely a mounting screw.

**NOTE :**

Microwave emission test should be performed after adjusting interlock mechanism.
If the microwave emission exceed 4mW/cm$^2$, readjust interlock mechanism.

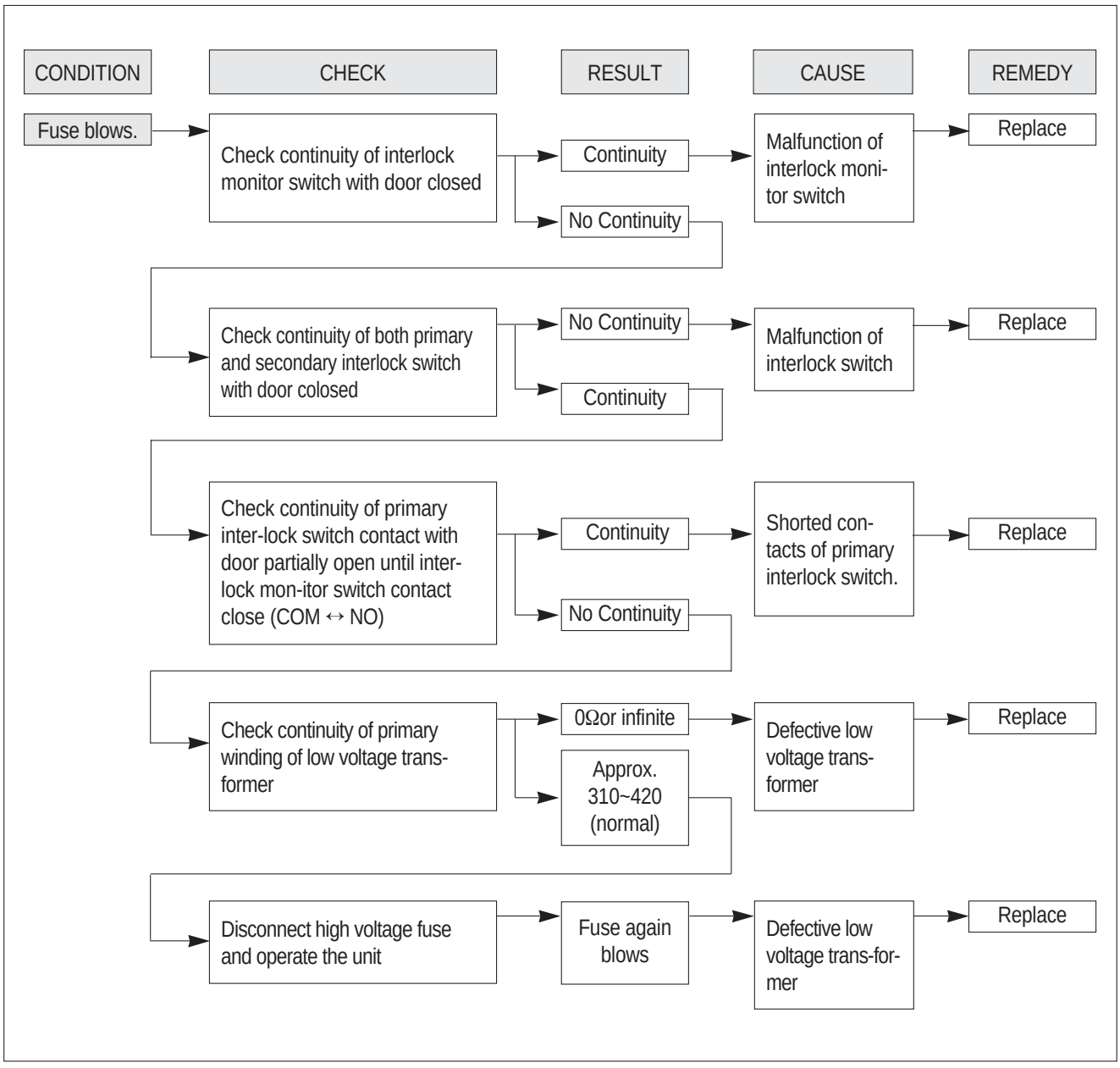
# TROUBLESHOOTING GUIDE

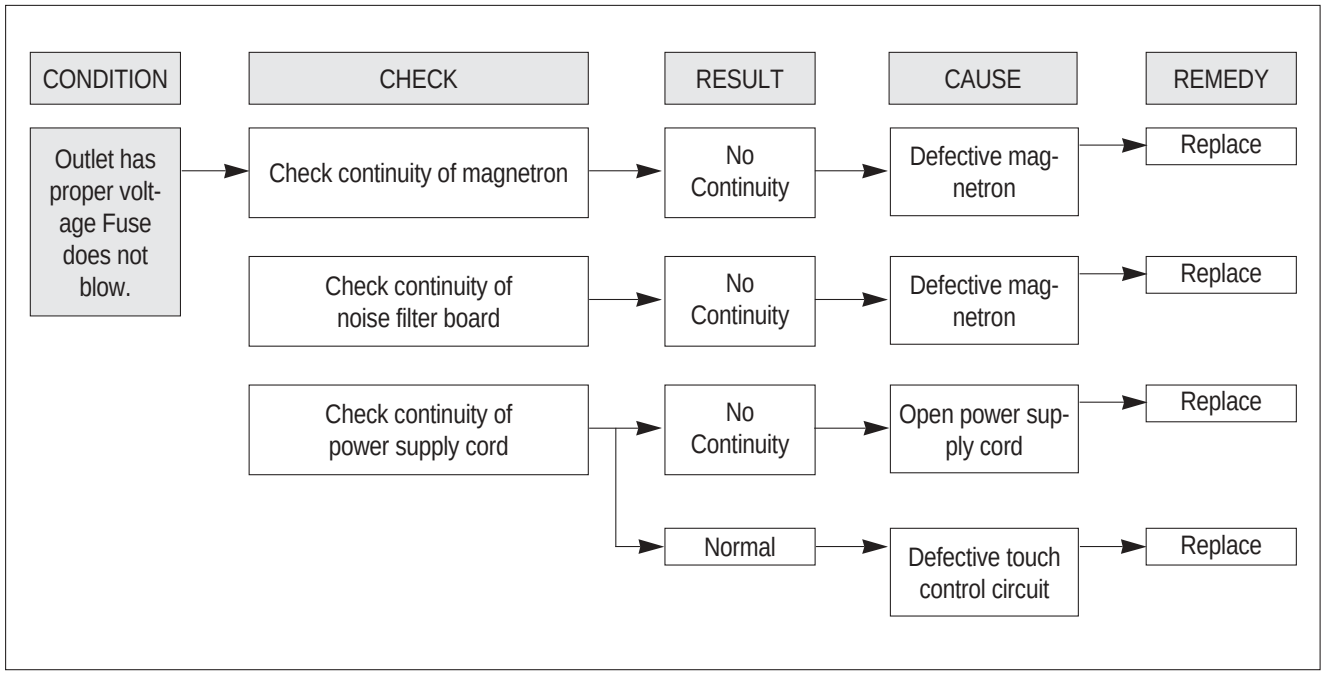
**Following the procedure below to check if the oven is defective or not.**

1. Check grounding before trouble checking.
2. Be careful of the high voltage circuit.
3. Discharge the high voltage capacitor.
4. When checking the continuity of the switches, fuse or high voltage transformer, disconnect one lead wire from these parts and check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.

**NOTE :** When electric parts are checked, be sure the power cord is not inserted the wall outlet.
Check wire harness, wiring and connected of the terminals and power cord before check the parts listed below.

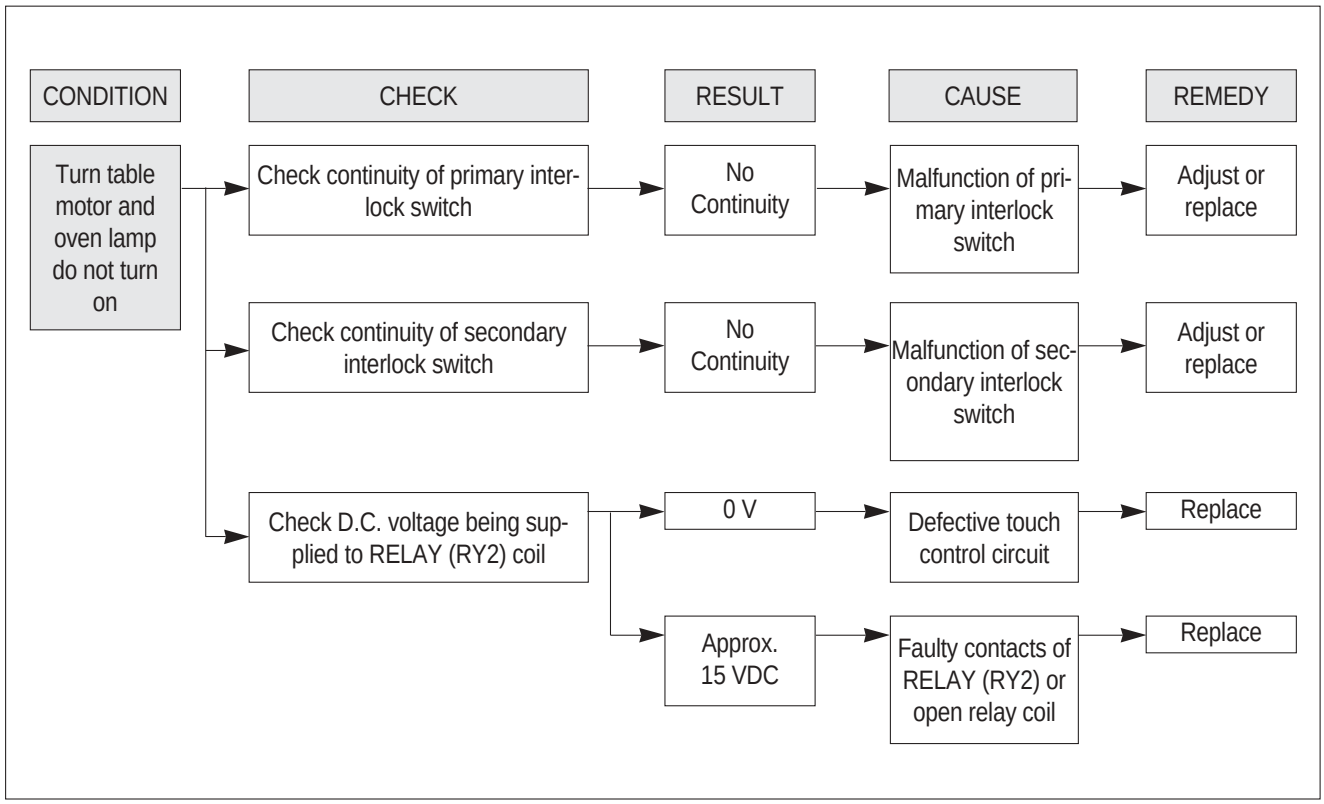
**(TROUBLE 1)** Oven does not operate at all ; any inputs can not be accepted.



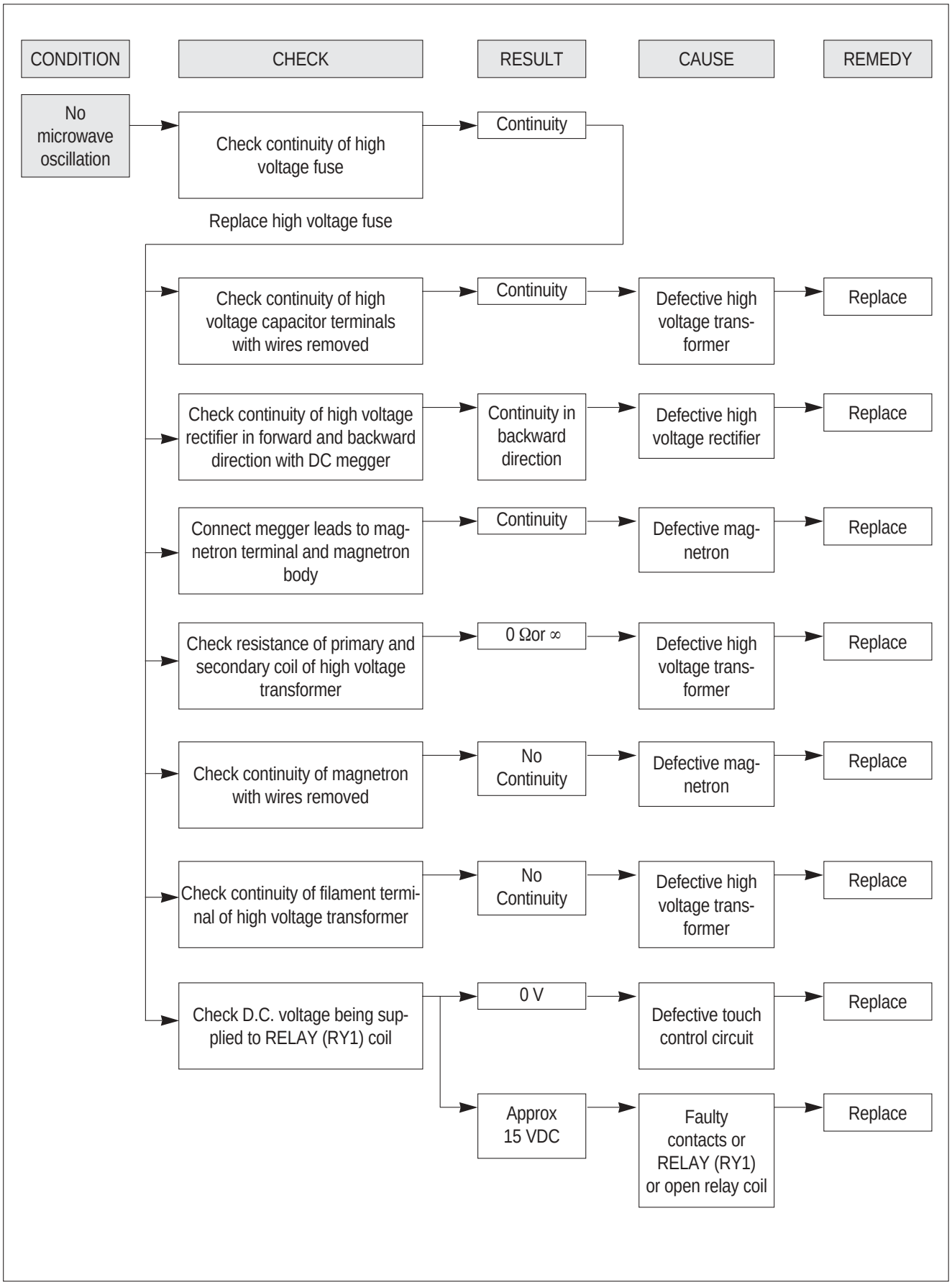



**NOTE**
All these switches must be replaced at the same time, please refer to “Interlock Mechanism And Adjustment”.

**(TROUBLE 2)** Display shows all figures selected, but oven does not start cooking, even though desired program and time are set and START button is tapped.

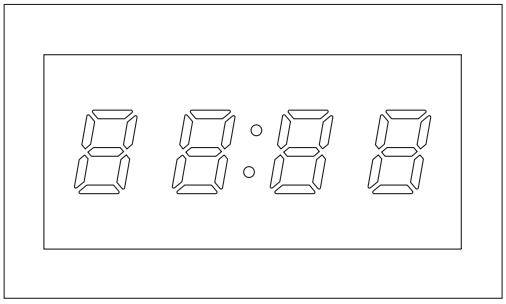


**(TROUBLE 3) No microwave oscillation even though fan motor rotates.**



**(TROUBLE 4)** The following visual conditions indicate a probable defective touch control circuit

1. Incomplete segments,
   1) Segments missing.
   2) Partical segments missing.
   3) Digit flickering other than normal display slight flickering.
   4) " :0" does not display when power is on.



2. A distinct change in the display are not on when they numbers is the display.

3. One or more digits in the display are not on when they should be.

4. Display indicates a number different from one touched.

5. Specific numbers (for example 2 or 3) will not display when the panel is touched.

6. Display does not count down or up with time cooking or clock operation.

7. Oven is programmable and cooks normally but no display shows.

8. Display obviously jumps in time while counting down.

9. Display counts down noticeably too fast while cooking.

10. Display does not show the time of day when the STOP/CLEAR pad is touched. (in case of setting the present time)

11. Oven lamp and turntable motor do not stop although cooking is finished. Check if the RELAY 2 contacts close. If they close, replace P.C.B assembly.

| CONDITION | CHECK | RESULT | CAUSE | REMEDY |
|---|---|---|---|---|
| Display does not show programming at all, even if keyboard is touched. | Check each pad for continuity of the membrane keyboard for the following keyboard check procedure | Normal | Malfunction of the control circuit board | Replace the control circuit board |
| | | Abnormal | Malfunction of the membrane keyboard | Replace the membrane keyboard |

**NOTE**
Before following the particular steps listed above in the troubleshooting guide for the failure of membrane keyboard, please check for the continuity of each wire-harness between the membrane keyboard and P.C.B. assembly.

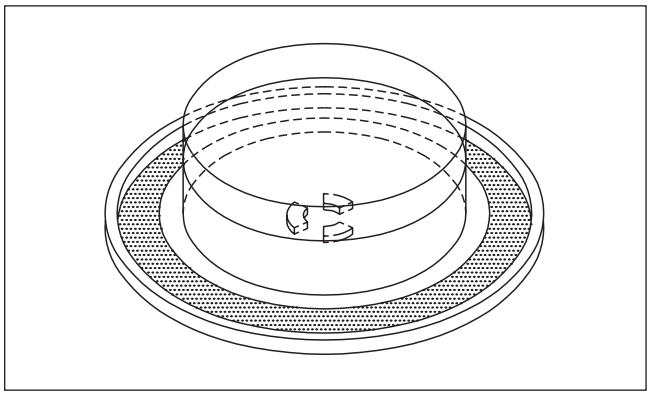
# MEASUREMENT AND TEST

## 1. MEASUREMENT OF THE MICROWAVE POWER OUTPUT

Microwave output power can be checked by indirectly measuring the temperature rise of a certain amount of water exposed to the microwave as directed below.

**PROCEDURE**

1. A cylindrical container of borosilicate glass is used for the test. It has a maximum thickness of 3mm, an external diameter of approximately 190mm and a height of approximately 90mm.
   The mass of the container is determined.
2. At the start of the test, the oven and the empty container are at ambient temperature. Water having an initial temperature of 10˚C ± 1˚C is used for the test. The water temperature is measured immediately before it is poured into the container.
3. A quantity of 1000g ± 5g of water is added to the container and its actual mass obtained.
   The container is then immediately placed in the centre of the oven shelf, which is in its lowest normal position.
   The oven is operated and the time for the water temperature to attain 20˚C ± 2˚C is measured. The oven is then switched off and the final water temperature is measured within 60s.



   NOTE 1 - The water stirred is before its temperature is measured.
   NOTE 2 - Stirring and measuring devices are to have a low heat capacity.

4. The microwave power output is calculated from the formula

$$P = \{4{,}187 \cdot m_w(T_2-T_1) + 0.55 \cdot m_c (T_2-T_0)\}/t$$

where
P is the microwave power output, in watts ;
$m_w$ is the mass of the water, in grams ;
$m_c$ is the mass of the container, in grams ;
$T_0$ is ambient temperature, in degrees Celsius ;
$T_1$ is the initial temperature of the water, in degree Celsius ;
$T_2$ is the final temperature of the water, in degrees Celsius ;
t is the heating time, in seconds, excluding the magnetron filament heating-up time.

**⁎ The microwave power output is stated in watts, rounded off to the nearest 50W**

**CAUTION**
1. Water load should be measured exactly to 1 liter.
2. Input power voltage should be exactly specified voltage (Refer to SPECIFICATIONS).
3. Ambient temperature should be 20 ± 2°C (68 ± 3.6°F)

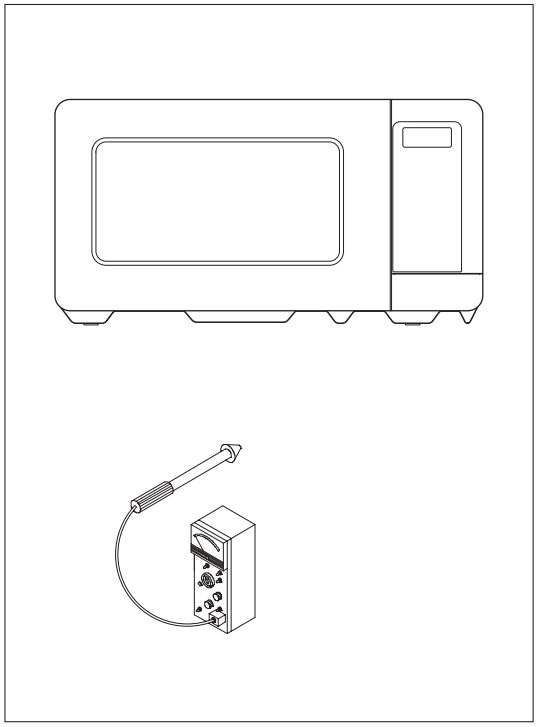
**⁎ Heating time for power output: ($T_2 = T_0$)**

| A (second) | 70 | 64 | 60 | 56 | 52 | 49 | 47 | 44 | 42 | 40 | 38 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B (W) | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 | 1100 |

## 2. MICROWAVE RADIATION TEST

**CAUTION :**
1. Make sure to check the microwave leakage before and after repair of adjustment.
2. Always start measuring of an unknown field to assure safety for operating personnel from microwave energy.
3. Do not place your hands into any suspected microwave radiation field unless the safe density level is known.
4. Care should be taken not to place the eyes in direct line with the source of microwave energy.
5. Slowly approach the unit under test until the radiometer reads an appreciable microwave leakage from the unit under the test.

**PROCEDURES**



1. Prepare Microwave Energy Survey Meter, 600cc glass beaker, and glass thermometer 100˚C(212˚F).
2. Pour 275cc±15cc of tap water initially at 20±5˚C(68±9˚F) in the 600cc glass beaker with an inside diameter of approx. 95mm(3.5in.).
3. Place it at the center of the tray and set it in a cavity.
4. Close the door and operate the oven.
5. Measure the leakage by using Microwave Energy Survey Meter with dual ranges, set to 2450MHz.
   1) Measured radiation leakage must not exceed the value prescribed below. Leakage for a fully assembled oven with door normally closed must be less than 4mW/cm$^2$.
   2) When measuring the leakage, always use the 5cm(2in.) space cone with probe. Hold the probe perpendicular to the cabinet and door. Place the space cone of the probe on the door, cabinet, door seem, door viewing screen, the exhaust air vents and the suction air vents.
   3) Measuring should be in a counter-clockwise direction at a rate of 1 in./sec. If the leakage of the cabinet door is unknown, move the probe more slowly.
   4) When measuring near a corner of the door, keep the probe perpendicular to the areas making sure the probe end at the base of the cone does not get closer than 2 in. from any metal. If it does not, erroneous reading may result.

## 3. COMPONENT TEST PROCEDURE

- High voltage is present at the high voltage terminal of the high voltage transformer during any cooking cycle.
- It is neither necessary nor advisable to attempt measurement of the high voltage.
- Before touching any oven components or wiring, always unplug the oven from its power source and discharge the capacitor.

### 1. High voltage transformer

(1) Remove connections from the transformer terminals and check continuity.
(2) Normal readings should be as follows:
Secondary winding.....Approx. 218.5 Ω±10%
Filament winding.....Approx. 0Ω
Primary winding .....Approx. 3.741 Ω

### 2. High voltage capacitor

(1) Check continuity of capacitor with meter on the highest OHM scale.
(2) A normal capacitor will show continuity for a short time, and then indicate 10MΩonce the capacitor is charged.
(3) A shorted capacitor will show continuous continuity.
(4) An open capacitor will show constant 10MΩ
(5) Resistance between each terminal and chassis should be infinite.

### 3. High voltage diode

(1) Isolate the diode from the circuit by disconnecting the leads.
(2) With the ohmmeter set on the highest resistance scale measure the resistance across the diode terminals.
Reverse the meter leads and again observe the resistance reading.
Meter with 6V, 9V or higher voltage batteries should be used to check the front-back resistance of the diode, otherwise an infinite resistance may be read in both directions.
A normal diode's resistance will be infinite in one direction and several hundred KΩin the other direction.

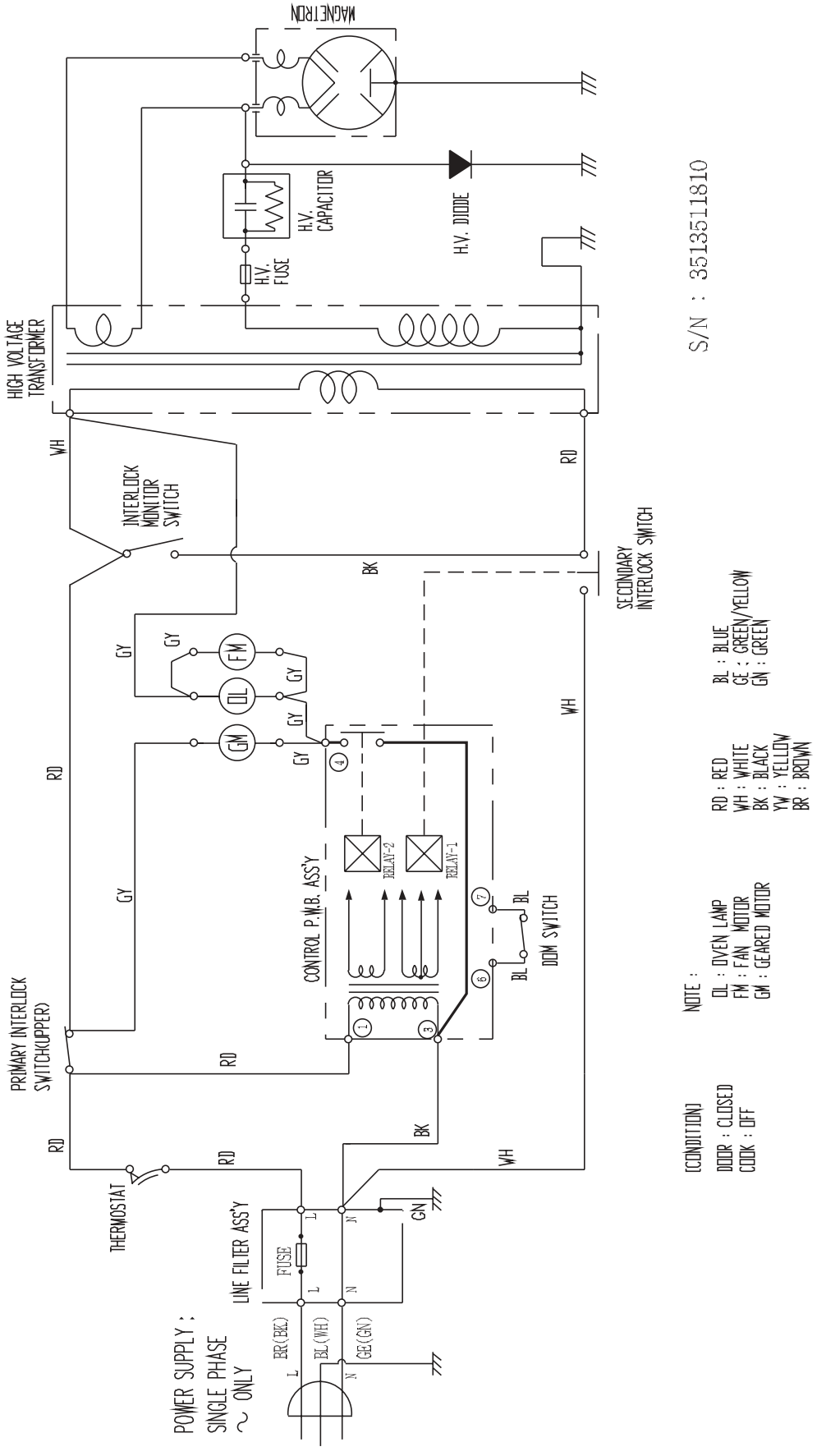
### 4. Magnetron

For complete magnetron diagnosis, refer to "Measurement of the Microwave Power Output".
Continuity checks can only indicate and open filament or a shorted magnetron.
To diagnose for an open filament or a shorted magnetron.
(1) Isolate magnetron from the circuit by disconnecting the leads.
(2) A continuity check across magnetron filament terminals should indicate 0.1Ωor less.
(3) A continuity check between each filament terminal and magnetron case should read open.

### 5. Fuse

If the fuse in the primary and monitor switch circuit is blown when the door is opened, check the primary and monitor switch before replacing the blown fuse.
In case the fuse is blown by an improper switch operation, replace the defective switch and fuse at the same time.
Replace just the fuse if the switches operate normally.

# WIRING DIAGRAM



# PRINTED CIRCUIT BOARD

## 1. CIRCUIT CHECK PROCEDURE

### 1. Low Voltage Transformer check

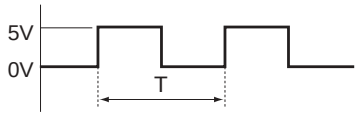
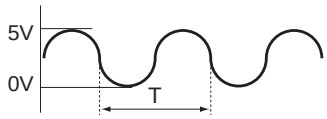
- The low voltage transformer is located on the P.C.B.
- Measuring condition: input voltage : 230V / Frequency : 50Hz

| Terminal Voltage | LOAD | NO LOAD |
|---|---|---|
| (4,5)-6 or (7,8)-6 | AC 14 V | AC 17 V |

**NOTE :**
1. Refer to Circuit Diagram.
2. Secondary side voltage of the low voltage transformer changes in proportion to fluctuation of power source voltage.
3. The allowable tolerance of the secondary voltage is within ± 5% of nominal voltage.

### 2. Voltage check

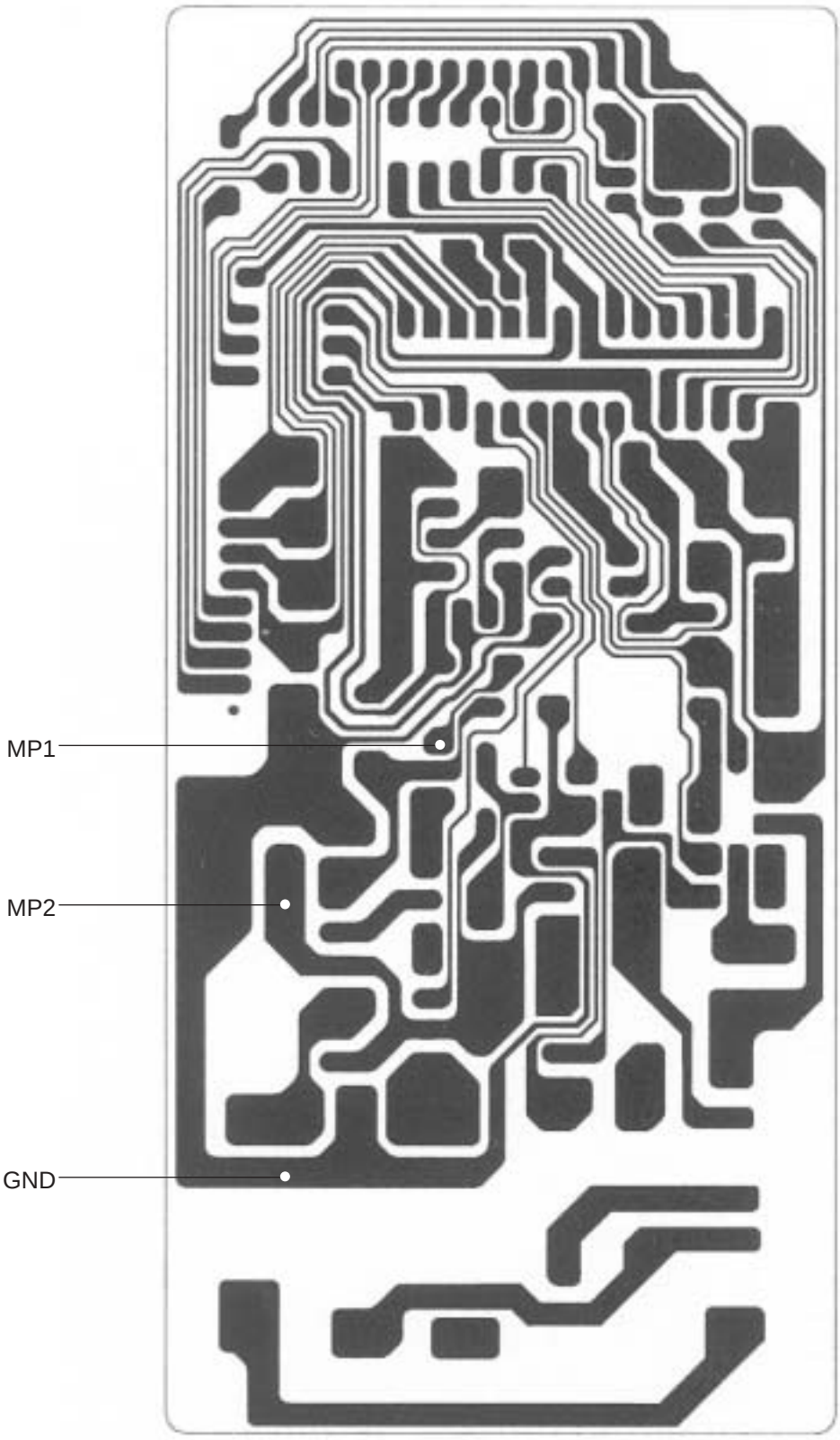
- Key check point

| NO | CHECK POINT | REMARK |
|---|---|---|
| 1 | IC 1 PIN 5 | 5 VDC |
| 2 | IC 1 PIN 8 |   T:20ms(50Hz) |
| 3 | IC 1 PIN 19 OR PIN 20 |   T:250ns(4MHz) |

- Check method

| NO | MEASURE POINT | WAVE FORM | REMEDY | REMARK |
|---|---|---|---|---|
| 1 | MP1 | DC 5V ±0.25V | Replace Q8, R28, ZD3, C2, EC1 | NO LOAD |
| 2 | MP2 | DC 15V ±2.0V | Replace EC3, D11, D12, D13 | NO LOAD |

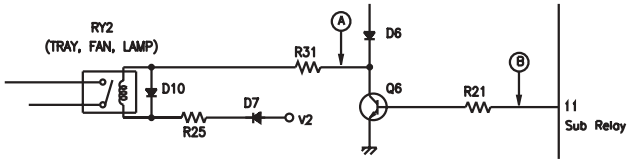
**NOTE :**
Each measure point must be measured with GND points.




**Measure Point**

**3. When there is no microwave oscillation**

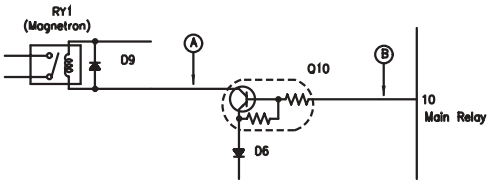
1) When touching **START** pad, oven lamp does not turn on.
Fan motor does not rotate, but cook indicator in display comes on.




- Check method

| STATE \ POINT | A | B |
|---|---|---|
| **RELAY 2** ON | GND | 5VDC |
| **RELAY 2** OFF | 15VDC | GND |

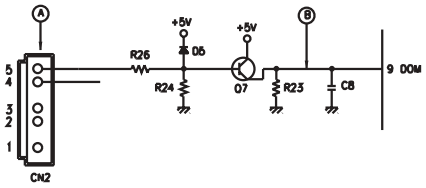
2) When touching **START** pad, oven lamp turns on.
Fan motor and turntable rotate and cook indicator in display comes on.




- Check method

| STATE \ POINT | A | B |
|---|---|---|
| **RELAY 1** ON | GND | 5VDC |
| **RELAY 1** OFF | 15VDC | GND |

**4. When the door is opened during operation, the count down timer does not stop.**



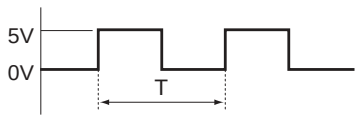

- Check method

| STATE \ POINT | A | B |
|---|---|---|
| 1) DOOR OPEN | OPEN | 5VDC |
| 2) DOOR CLOSED | CLOSE | GND |

| CHECK NO | METHOD | REMEDY |
|---|---|---|
| 1 | Check the stage(ON, OFF) of the door open monitor switch by resistance measurement. | Replace door open monitor switch. |

**5. When the digital clock does not operate properly.**

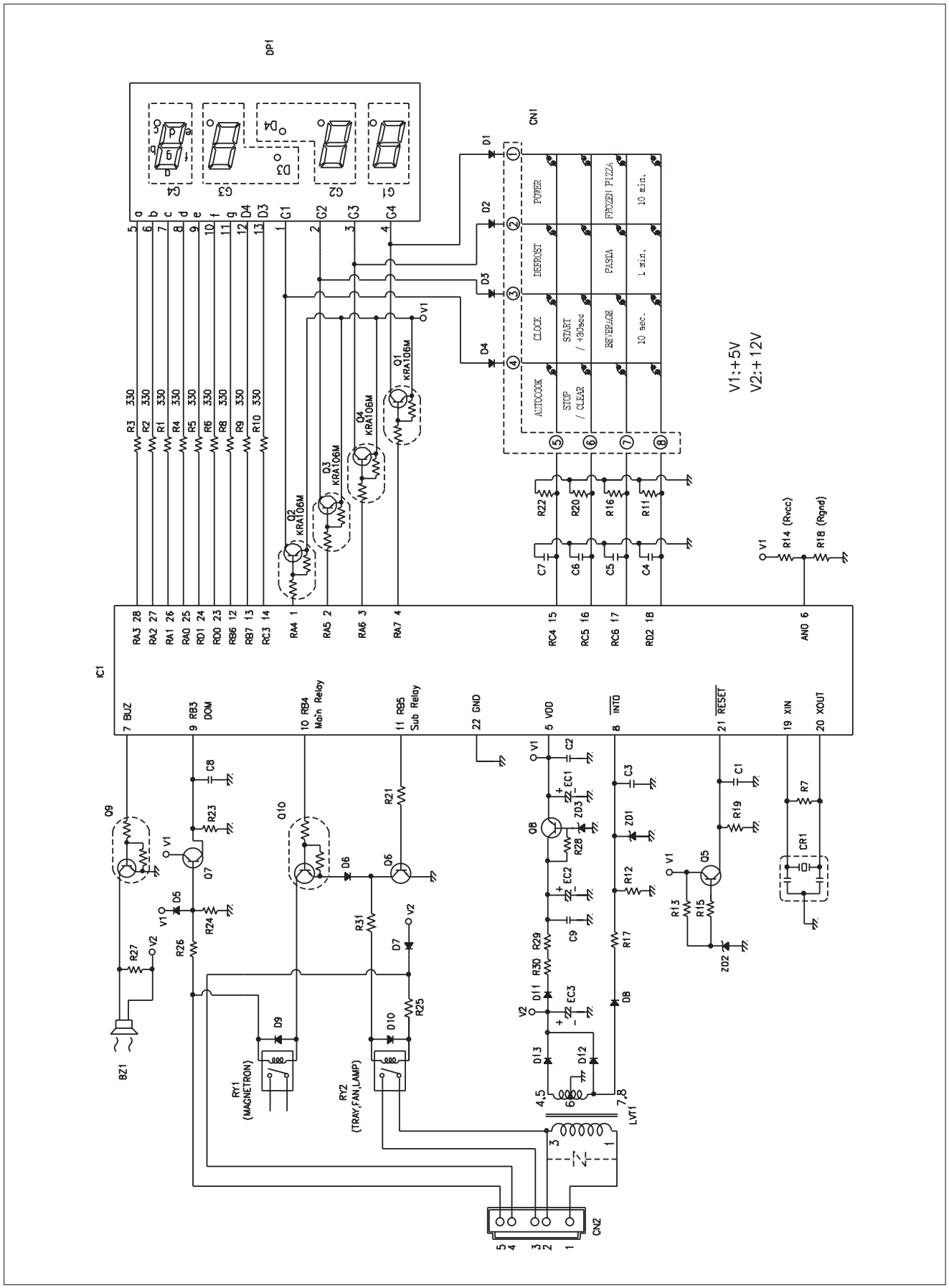
→ refer to Circuit Diagram

| POINT | WAVE FORM |
|---|---|
| **IC 1 PIN 8** |  T:20ms(50Hz) |



*If clock does not keep exact time, you must check resistor R12, R17, D8, C3 and zener diode ZD1.

## 2. PCB CIRCUIT DIAGRAM



### 3. PCB LOCATION NO.

| NO | NAME | SYMBOL | SPECIFICATION | PART CODE | Q'TY |
|---|---|---|---|---|---|
| 1 | BUZZER | BZ1 | BM-20K | 3515600100 | 1 |
| 2 | CAPACITOR CERAMIC | C1,2,3,8,9 | 50V 0.1UF Z AXIAL | CCZF1H104Z | 5 |
| 3 | CAPACITOR CERAMIC | C4,5,6,7 | 50V 1000PF Z AXIAL | CCZB1H102K | 4 |
| 4 | CAPACITOR ELECTRO | EC1 | 50V RS 10UF(5X11) | CEXE1H100A | 1 |
| 5 | CAPACITOR ELECTRO | EC2 | 50V RSS 220UF(10X16) | CEXF1H221V | 1 |
| 6 | CAPACITOR ELECTRO | EC3 | 25V RSS 1000UF(13X20) | CEXF1E102V | 1 |
| 7 | CONNECTOR WAFER | CN1 | FCZ254-8 | 441M367130 | 1 |
| 8 | CONNECTOR WAFER | CN2 | YW396-725V | 3519150550 | 1 |
| 9 | DIODE SWITCHING | D1~10 | 1N4148 | DZN4148--- | 10 |
| 10 | DIODE RECTIFYING | D11~13 | 1N4004A AUTO 52MM | DZN4004A-- | 3 |
| 11 | DIODE ZENER | ZD1 | UZ -5.1BSB | DZUZ5R1BSB | 1 |
| 12 | DIODE ZENER | ZD2 | UZ -3.3BSB | DZUZ3R3BSB | 1 |
| 13 | DIODE ZENER | ZD3 | UZ -5.6BSB | DZUZ5R6BSB | 1 |
| 14 | FOAM | | CR 8TX35X10 | 3517307000 | 1 |
| 15 | LED DISPLAY | DP1 | TOF-3491HG-B | DTOF3491HG | 1 |
| 16 | IC MICOM | IC1 | HMS87C1408B | 150LC1408B | 1 |
| 17 | PCB MAIN | M325 | 65X139 | 3514330740 | 1 |
| 18 | RESISTOR | R13 | 1/6W 200 OHM 5% | RD-AZ201J- | 1 |
| 19 | RESISTOR | R1~6,8~10 | 1/6W 330 OHM 5% | RD-AZ331J- | 9 |
| 20 | RESISTOR | R15,27,28 | 1/6W 1K OHM 5% | RD-AZ102J- | 3 |
| 21 | RESISTOR | R21,26 | 1/6W 4.7K OHM 5% | RD-AZ472J- | 2 |
| 22 | RESISTOR | R12,17,19,23 | 1/6W 10K OHM 5% | RD-AZ103J- | 4 |
| 23 | RESISTOR | R24 | 1/6W 47K OHM 5% | RD-AZ473J- | 1 |
| 24 | RESISTOR | R11,16,20,22 | 1/6W 100K OHM 5% | RD-AZ104J- | 4 |
| 25 | RESISTOR | R7 | 1/6W 1M OHM 5% | RD-AZ105J- | 1 |
| 26 | RESISTOR | R25 | 1/4W 51 OHM 5% | RD-4Z510J- | 1 |
| 27 | RESISTOR | R31 | 1/4W 100 OHM 5% | RD-4Z101J- | 1 |
| 28 | RESISTOR | R29,30 | 1/2W 27 OHM 5% | RD-2Z270JS | 2 |
| 29 | RESONATOR CERAMIC | CR1 | CRT-4.00MS | 5P4R00MTS- | 1 |
| 30 | SW RELAY | RY1 | G5G-1A-DT DC 12V | 5SC0101123 | 1 |
| 31 | SW RELAY | RY2 | CS11-12SH | 5SC0101128 | 1 |
| 32 | TRANSISTOR | Q5,7 | KTA1266Y AUTO | TZTA1266Y- | 2 |
| 33 | TRANSISTOR | Q6,8 | KTC3198GR AUTO | TZTC3198GR | 2 |
| 34 | TRANSISTOR | Q1~4 | KRA106M AUTO | TZRA106M-- | 4 |
| 35 | TRANSISTOR | Q9,10 | KRC106M AUTO | TZRC106M-- | 2 |
| 36 | TRANS POWER | LVT1 | DMR-63KFS | 5EPV035306 | 1 |
| 37 | WIRE COPPER 7.5MM | J1,2,4,5,7,8 | 1/0.52 TIN COATING | 85801052GY | 6 |
| 38 | WIRE COPPER 10MM | J3,6, | 1/0.52 TIN COATING | 85801052GY | 2 |
| 39 | RESISTOR | R14 (RVCC) | 1/6W 1K OHM 5% | RD-AZ102J- | 1 |

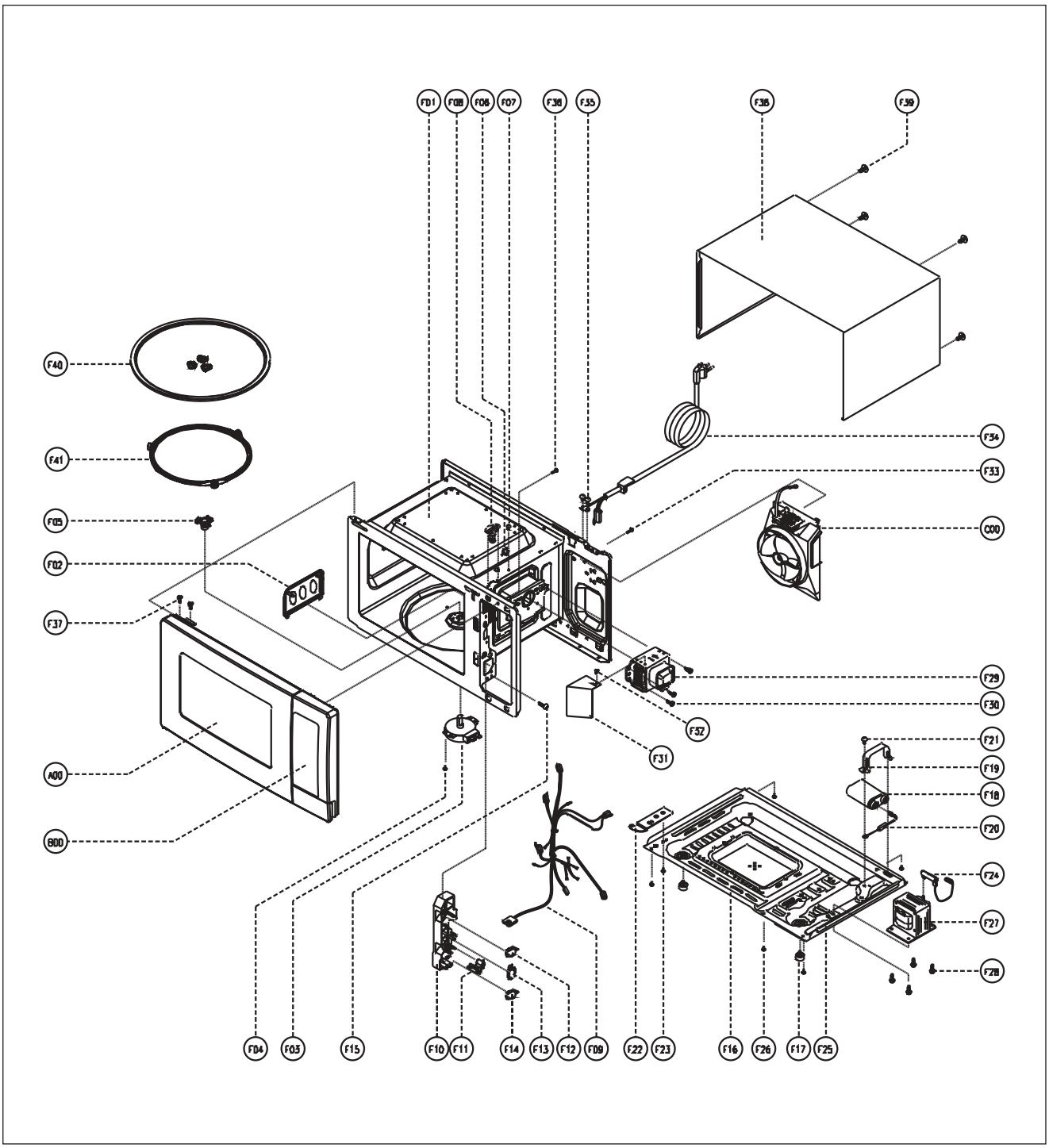
# *EXPLODED VIEW AND PARTS LIST*

**1. DOOR ASSEMBLY**
Refer to Disassembly and assembly.

**2. CONTROL PANEL ASSEMBLY**
Refer to Disassembly and assembly.

**3. GUIDE WIND ASSEMBLY**
Refer to Disassembly and assembly.

**4. TOTAL ASSEMBLY**



| REF. NO | PART CODE | PART NAME | DESCRIPTION | Q'TY |
|---|---|---|---|---|
| F01 | 3516121600 | CAVITY AS | KOR-4A070S | 1 |
| F02 | 3511415700 | COVER WAVE GUIDE | PP 5113MF6 | 1 |
| F03 | 3517209710 | MOTOR SYNCRO | 49TYD -5B | 1 |
| F04 | 7121400611 | SCREW TAPPING | T2S PAN 4X6 MFZN | 1 |
| F05 | 3517400620 | COUPLER | XAREC | 1 |
| F06 | 3518907010 | THERMOSTAT | OFF:120 ON:60 H #187 | 1 |
| F07 | 7121300611 | SCREW TAPPING | T2S PAN 3X6 MFZN | 1 |
| F08 | 3513601600 | LAMP | BL 240V 25W T25 C7A H187 | 1 |
| F09 | 3512784570 | HARNESS MAIN | KOR-4A0B0W | 1 |
| F10 | 3513822000 | LOCK | POM, BK | 1 |
| F11 | 3513703800 | LEVER LOCK | PP 5113MF6 | 1 |
| F12 | 4415A17352 | SW MICRO | VP-533A-OF SPNO #187 200G | 1 |
| F13 | 4415A66600 | SW MICRO | VP-532A-OF SPNC #187 200G | 1 |
| F14 | 3518571000 | SWITCH PUSH | V0303A2/MP101C | 1 |
| F15 | 7122401211 | SCREW TAPPING | T2S TRS 4*12 MFZN | 1 |
| F16 | 3510319300 | BASE | SBHG T0.5 | 1 |
| F17 | 3512100900 | FOOT | PP DASF-130 | 2 |
| F18 | 3518301601 | CAPACITOR HV | 2100VAC 0.79UF #187 65MM | 1 |
| F19 | 3513005800 | HOLDER CAPACITOR | SECC T0.4 | 1 |
| F20 | 3518400800 | DIODE HV AS | ESJC13-12BX (CL01-12) | 1 |
| F21 | 7S432X4081 | SPECIAL SCREW | TT3 TRS 4X8 SE MFZN | 1 |
| F22 | 3515205610 | STOPPER HINGE *U | SCP-1 T2.0 | 1 |
| F23 | 7S432X4081 | SPECIAL SCREW | TT3 TRS 4X8 SE MFZN | 1 |
| F24 | 3518704300 | FUSE HV | 5KV, 0.5A HV-41A50 | 1 |
| F25 | 3517305800 | FOAM | CR 5TX10X155 | 1 |
| F26 | 7S312X40A1 | SCREW SPECIAL | T1 TRS 4X10 SE MFZN | 5 |
| F27 | 3518125740 | TRANS HV | S1S55A LA30 | 1 |
| F28 | 3516003700 | SPECIAL SCREW | TT3 HEX 4X8 FLG MFZN | 4 |
| F29 | 3518003710 | MAGNETRON | 2M218HFL 6CF | 1 |
| F30 | 3516003700 | SPECIAL SCREW | TT3 HEX 4X8 FLG MFZN | 3 |
| F31 | 3512527800 | GUIDE AIR | SECC T0.5 | 1 |
| F32 | 7S312X40A1 | SCREW SPECIAL | T1 TRS 4X10 SE MFZN | 1 |
| C00 | 3512530430 | GUIDE WIND AS | KOR-4A070S | 1 |
| F33 | 7S312X40A1 | SCREW SPECIAL | T1 TRS 4X10 SE MFZN | 1 |
| F34 | 35113AEQ0D | CORD POWER AS | 3X0.75 70X70 100-RTML | 1 |
| F35 | 7S432X4081 | SPECIAL SCREW | TT3 TRS 4X8 SE MFZN | 2 |
| B00 | 3516741380 | CONTROL-PANEL AS | KOR-4A0B0W | 1 |
| F36 | 7122401211 | SCREW TAPPING | T2S TRS 4*12 MFZN | 1 |
| A00 | 3511730500 | DOOR AS | KOR-4A070S | 1 |
| F37 | 7S432X4081 | SPECIAL SCREW | TT3 TRS 4X8 SE MFZN | 2 |
| F38 | 3510811310 | CABINET AS | KOR-4A070S | 1 |
| F39 | 7112401011 | SCREW TAPPING | T1 TRS 4*10 MFZN | 4 |
| F40 | 3517203600 | TRAY | GLASS | 1 |
| F41 | 3512517500 | GUIDE ROLLER AS | KOR-63150S | 1 |

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CABLE: “DAEWOOELEC”

S/M NO. : OR4A0B0W001

PRINTED DATE: Jan. 2011

# ABOUT THIS MANUAL

VISION CREATIVE, INC.
서울 종로구 통의동
6번지 이룸빌딩 4층

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|---|---|---|---|
| 담 당 | 장형석 님 | | |
| MODEL | KOR-4A0B0W (S/M) | | |
| 접 수 | 2011.01.07 | | |
| 일 정 | 1차 | | |
| | 2차 | | |
| | 3차 | | |
| | 4차 | | |
| | 5차 | | |
| 제 판 | 한 | 인 쇄 | |
| 규 격 | | | |

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